

WaterLine

A publication about Ontario's water and wastewater industry.

The Economic Case for Water Conservation

Sometimes the toughest place to sell the idea of water conservation is the budget room. Reductions in water usage and wastewater generation mean reduced revenues, forcing some revenue-vulnerable municipalities to hike rates in response.

The environmental case is clear, but what about the economics?

Steve Gombos, Manager of Water Efficiency for the Region of Waterloo, says the rate debate comes down to positioning. "Consumers who reduce their usage can still see savings, even in the face of rate hikes. When you consider the long-term benefits to our environment, it's a good message."

But Gombos says the financial reasons for adopting water conservation programs stand on their own.

"It comes down to peak demand reduction. If we reduce usage on those few days when demand is highest, we avoid the cost of upgrading water treatment and wastewater infrastructure. That means savings in the millions of dollars. Those

are numbers any budget chief can get behind."

Ken Sharratt agrees. His firm, Sharratt Water Management Ltd., helps municipalities evaluate the sustainability of their water systems and make informed decisions about future requirements.

"A robust water conservation program can help defer capital investments in water treatment and wastewater management by years – even decades," says Sharratt. "In some cases revealing excess capacity can even let you lift a growth freeze, creating opportunities to generate new development revenue."

Sharratt adds that the regulatory environment is introducing its own pressures. "Municipalities renewing water-taking permits will likely be asked what they're doing to promote water conservation. And the Province is currently drafting an Ontario-wide water conservation policy."



There are many factors to consider when pursuing a water conservation program, from the resources and time required to implement, to the attitude of the public. But it all starts with the cost-benefit calculation.

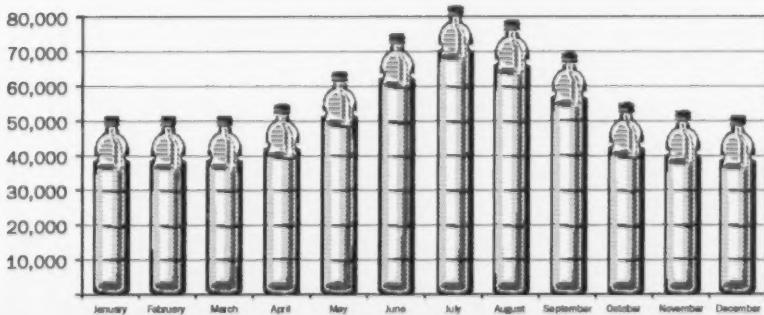
A robust water conservation program can help defer capital investments...

"Say it costs you \$2 to produce one cubic metre of treated water," Gombos suggests. "That becomes your benchmark for whether to pursue an initiative: if it can help you save a cubic metre of water for an investment of less than \$2, then it's cost-effective. You pursue the initiatives that provide the biggest bang for the buck."

"In Waterloo Region, for example, we've seen tremendous uptake on toilet rebates as water-efficient toilets have gotten

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Cubic Metres



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Protecting a precious resource



A message from Nick Reid
OCWA's VP Business Development

"All the water that will ever be is, right now."

It's true – we're not making any new water.

"All the water that will ever be is, right now."

I first came across that compelling and memorable quote nearly 15 years ago in an issue of National Geographic. What at first seems like a statement of common sense can also be interpreted as a profound reality with implications for us, our children and all future generations.

It's true – we're not making any new water.

The concept of conservation has long been a cornerstone of the water management industry. And thanks to public attention around issues such as global warming and energy conservation, more and more people are finding ways to conserve and protect all of our precious resources, including water.

As stewards of Ontario's water supply, we all have a role to play – not only in practicing these themes, but also in promoting them with the public through initiatives such as reinforcing best prac-

tices related to how we discard hazardous materials, enforcing sewer by-laws, implementing water-smart technologies, and encouraging water-efficient landscaping.

These are particularly timely matters as we prepare for summer, the season in which the public uses more water than at any other time of the year.

In this issue of *Waterline*, we present you with several different takes on the new face of conservation. In our cover story, we examine the fiscal incentives associated with water conservation at the municipal level. You'll also learn how one municipality used electronic monitoring and leak detection technology to pinpoint a break that was draining both their water supply and their finances. And then there's my personal favourite, a story about an award-winning golf course that found an innovative (and less expensive) way to keep the grass green while reducing its demand on both the aquifer and the municipal water supply.

We hope you enjoy this issue.

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better. These new toilets work extremely well, and are down from 13 litres per flush to less than six litres – water savings that continue to pay off for years."

Other initiatives the Region supports include subsidized rain-barrel distribution, water-efficient landscaping, and education programs for businesses and industries.

"We also have a water conservation by-law in effect from May 31st to September 30th that restricts lawn watering to one day per week, rotating by address. We actively support the by-law through education and enforcement."

The net result, says Gombos, is a reduction in peak demand that sees the Region getting more out of their current systems.

While each municipality should determine what initiatives make sense in its jurisdiction, the need for water conservation is clear. "There's just no question," says Sharratt. "Promoting water efficiency makes fiscal as well as environmental sense for all of us."

Keeping Track of All That Water

Traditionally, when water crews tap into local hydrants to clean out neighbourhood pipes – a process called "flushing and swabbing" – municipalities haven't been able to monitor how much water they were actually using in the process.

Bromer Industries' Marc Campbell is changing that, with a new device that makes the job easier for cleaning crews, and provides volume tracking at the same time.

"Before, crews would have to lug heavy equipment to and from the hydrant," explains Campbell. "This gauge attaches right onto their truck hitch, and combines a flow diffuser and a volume meter (a de-chlorination device can also be added). The crew only has to handle a standard fire hose, to easily monitor the amount of water they're using."

By accounting for that water usage, municipalities gain a more accurate

picture of water loss rates, that, in turn, allows them to provide more accurate reporting to the Ministry of the Environment. In addition they may also avoid unnecessary leak detection procedures.

Campbell is in discussions with manufacturers to explore installing similar meters into fire trucks.



Leak-busting in Carleton Place

In the fight against water leaks, data is the critical weapon. Just ask the operators at Carleton Place, a growing commuter town outside Ottawa.

"For years, we experienced high usage levels, particularly at night," explains Andy Trader, Cluster Manager for the Ottawa Valley Hub. "We suspected leaks, but needed more data for a full analysis. So we utilized Outpost 5, and it really opened our eyes."

Outpost 5, OCWA's remote water monitoring system, provides constant electronic monitoring of flows in and out of water treatment and wastewater systems in a single view, generating a stream of live data. Over time, that data creates a history that allows operators to evaluate the efficiency of the system, identify inconsistencies and compare those results against other municipalities.

"We investigated areas of interest based on the data generated," Trader says. "Sure enough, we were able to confirm water loss as a major issue, enabling the Town to locate and repair three significant leaks where we were losing treated water, a portion of which was making its way into the collection system."

Repairs on two of the leaks have brought Carleton Place's daily volumes down 20%...

"Some municipalities using Outpost 5 can tell when commercials occur during the Grey Cup", explains OCWA Outpost Project Coordinator Bob Simpson. "That degree of detailed data makes leak detection a much more precise science. By manipulating flows and monitoring the outcomes in real time, you can quickly and accurately identify discrepancies, making leaks much easier to locate."

Repairs on two of the leaks have brought Carleton Place's daily volumes down 20% from 6,500 cubic metres, with repairs on a third leak expected to reduce volumes by a further 10% - effectively increasing the town's capacity for future growth.

"By investing in Outpost 5", says Trader, "we've been able to reduce operational costs and possibly delay any future capacity upgrades by as much as ten years."

Using Recycled Water for the Good of the Green

Award-winning golf course finds unique solution to water woes

Since 1925, the Kingsville Golf and Country Club has enjoyed a reputation as an award-winning, championship golfing destination. Not far from the Windsor/Detroit border, the course is perhaps best known for its rolling hills, treed fairways and true greens.

As with any golf course, maintaining a lush, green environment requires hard work and water - lots of water. Club management was looking for alternatives to keeping the course green without overburdening the Union Water System, which supplies water to the area.

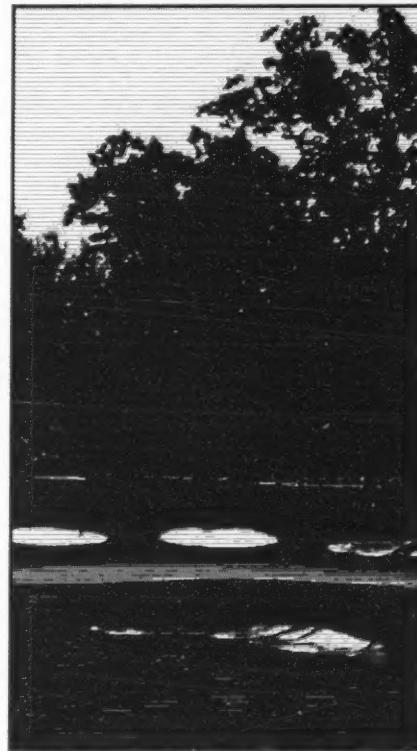
Extended drought conditions in the summer of 2001 brought the challenge to the forefront. That was when OCWA's operations staff at the Lakeshore West Wastewater Treatment Plant proposed a unique solution. Their idea? Irrigate the course with recycled effluent from the treatment plant. If successful, it would allow the club to maintain the impeccable conditioning of the course without taxing the local drinking water supply. It sounded like the ideal solution - but could it actually work?

A Hole in One

The club and OCWA collaborated to make the innovative plan a reality. After consulting with engineers and the Ministry of the Environment, the club commissioned the installation of a forcemain and pump station to divert the treated effluent from the wastewater facility to the golf course. OCWA's staff agreed to operate and maintain the system to ensure an adequate supply of irrigation water.

The initiative has been a huge success. In fact, this summer will mark the fourth year for the unique program.

"Our club has utilized effluent water for the past three summers, which has greatly enhanced our turf quality," said Doug Quick, General Manager of the



A challenging green at the award-winning Kingsville Golf and Country Club

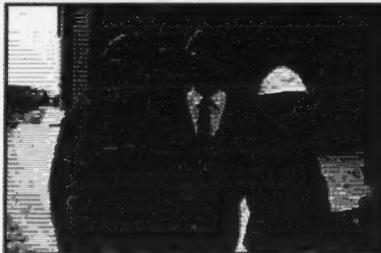
Kingsville Golf Club and Country Club. "This recycling process was simplified by the tremendous cooperation we received from the OCWA operators. The entire staff was professional, polite, courteous and accommodated our needs in a timely fashion. And we're looking forward to working with them again this year."

"This is the ultimate example of a win-win situation," said Gary Dunmore, Operations Manager for OCWA's Essex East Hub. "The club and its members get to enjoy a beautiful, lush course, the demand on the Town's water supply is reduced and it's an environmentally-friendly solution as well. This is an approach that every golf course in the province should investigate."

Region of Peel and OCWA play host

Recently, representatives of Trinidad and Tobago's Water and Sewerage Authority (WASA) visited the Region of Peel's South Peel facilities to learn more about how OCWA supplies engineering and operational services. Agency personnel led the tour and information session for WASA's Sandra Sammy, Eric MacDonald and Leslie Figaro.

They were here seeking ways to improve Trinidad & Tobago's infrastructure and control large-scale construction projects. The WASA reps also met with experts from the City of Toronto as well as Peel's Director of Water Services, Mark Schiller, and OCWA's Regional Operations Manager for Peel, David Edwards.



Eric MacDonald, WASA's CEO, centre, enjoyed WASA's Leslie Figaro, left, and Sandra Sammy's reaction to seeing their first snowfall!

FLOWER POWER

Spring has sprung at the Region of Peel's Clarkson Wastewater Treatment Plant where nine giant-size sunflower solar collectors are blooming on a slope near Lakeshore Road in Mississauga. It's all to show passers-by that solar energy packs a lot of potential as an alternative power source. OCWA operates the Clarkson plant and is managing public education and awareness for the Sunflower project. For more information, contact: Nevin McKeown, *South Peel Capital Works Manager* (nmckeown@ocwa.com) or John Glass, *South Peel Energy & Distribution Manager* (sglass@ocwa.com).



When a mock terrorist attack struck the Peel region drinking water supply in February 2008, OCWA got the chance to test its emergency contingency plans. It was all part of a collaborative effort with the Region of Peel Public Works and the Peel Regional Police Tactical Division to strengthen community safety measures.

Over 80 representatives from across Ontario gathered in Orillia April 2-3, 2008 for a rousing forum on workplace health and safety. OCWA board member Allan Gunn got things started with an expression of commitment to goals for health, safety and wellness in the organization. Throughout, senior management team members added their commitment to achieving zero lost time incidents.

Speakers from the Operations Division and Industrial Accident Prevention Association (IAPA) as well as Ontario's Ministry of Labour also addressed the gathering. Then, Health and Safety reps Angelo Magnifico and Steve Clappison shared their knowledge of workplace inspections. Many great ideas flowed from the gathering and will contribute to future discussion about OCWA initiatives.

Testing the waters

For the past several weeks OCWA has been running training courses to keep the agency up to speed on upcoming accreditation requirements under the Safe Drinking Water Act of 2002. It's a critical training component of OCWA's Quality & Environmental Management System (QEMS). In February, 2008, they piloted a one-day session, *Drinking Water Quality Management Standards (DWQMS) Overview & Operational Plan*. Participant feedback was positive and included suggestions for enhancing the course. Corporate Compliance Advisor Angela Storey was instrumental in course design and delivery.



One of several training sessions planned by OCWA to prepare for new standards.



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